

Shockwave Biosurgery for Stress Fractures

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The current treatment protocols for stress fractures are based on a progressive retraining that takes the athlete out of active competition from twelve weeks to sometimes over a year. The patients usually progress from mild pain to no pain after a long rehabilitation protocol that in many cases lead to an athletic career retirement. Shockwave therapy has shown relevant effects in bone healing metabolism.

The generation of endogenous growth factors through the percutaneous stimulation with high energy focalised or radial shockwaves, has been used successfully for bone healing enhancement in pathologies like non-unions and avascular necrosis. The use of shockwaves in a bone pathology caused by repetitive loadings that over-ride the healing capacity of the tissue could be helpful in reducing healing time and obtaining a faster recovery with fewer incidences of recidives.

We have reported in the past five years the results of the application of shockwave biosurgery in stress fractures. Our first study showed a significant reduction in time recovery in tibial stress fractures as compared with contralateral controls in military recruits. A five year follow up has showed no recidives. From that point we have treated 32 patients with stress fractures, including high performance professional tennis players and Olympic athletes. We use a 4000 focused shockwave single session protocol, with top energy levels of 0.3 mJ/mm². We keep a strict rehabilitation protocol, and our patients are usually back in sports with significant pain reduction after six weeks.

This simple harmless technique has allowed us to cut in half the recovery time in patients with stress fractures, and avoid invasive procedures in all of our cases.